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The effects of repeated reading and goal setting on student reading fluency

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The Effects of Repeated Reading and Goal Setting on Student Reading Fluency

BY

JoAnn T. Ford

THESIS

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The Effects of Repeated Reading and Goal Setting on Student Reading Fluency

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Dedication

To Grandma Ford…You are an inspiration to us all. I hope my mind is as sharp as yours when I am your age and can grow old as gracefully as you have. Thank you for believing in me. I will go all the way.

Love,

JoAnn

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Abstract

This study investigated the effect of repeated reading and goal setting on students' oral reading fluency (ORF). Third grade students (n=24) were randomly assigned to one of three groups: repeated reading and goal setting, repeated reading, and no-treatment control group. Treatment groups met for six weeks, four times per week for 20 minutes. A paired repeated reading procedure was used and weekly progress monitoring occurred using third grade DIBELS ORF progress monitoring probes. Repeated reading and goal setting group set weekly goals, graphed fluency data, and received feedback. All groups made gains in reading fluency. Although no significant effects were found for the repeated reading and goal setting condition, overall this group made greater fluency gains.

Curriculum-based measurement (CBM) is the direct and repeated measurement of a specific academic skill using standardized documentation procedures with materials taken directly from the curriculum. Specifically it is used to monitor student progress toward goals in reading, mathematics, spelling, and writing. A large emphasis in CBM is placed on reaching long-term goals and progress monitoring toward those goals using graphs. The use of CBM in regular and special education settings has shown that data from progress monitoring inform positive instructional changes for teachers and are associated with higher achievement rates. Variations of goal setting and graphing have been studied, usually producing positive achievement rate increases. The current study looked at how CBM, student self-set goals and graphing influenced student's oral reading fluency rates when combined with a repeated reading treatment.

Approximately 75% of students identified as having reading problems by third grade are found to be struggling in ninth grade (Francis, Shaywitz, Stuebing, Shaywitz, & Fletcher as cited in Shapiro, 2004). Research documents that poor readers spend significantly less time reading than do skilled readers (Allington 1983; Biedmiller 1977). Nagy & Anderson (1984) estimated that good readers may read nearly one million words per year in and out of school, while less skilled readers may read as few as 100,000 words per year. This is a concern, especially considering successes in other academic areas depend on a student's reading skills. The National Reading Panel (2000) report cited a study by Pinnell and associates that looked at reading fluency across the United States. In a nationally representative sample of fourth graders, 44% of students could not read fluently. This suggests a need to address a national deficit in fluency.

Fluency, defined as the ability to read connected text rapidly, accurately, and effortlessly (Meyer & Felton, 1999), is often an overlooked skill, yet one of the most important. Many school programs focus on phonics, decoding, and accuracy of word reading, but fail to emphasize fluency skills needed to become an efficient and successful reader. In the acquisition of learning to read, even if a reader is accurate at decoding text, without fluency he or she will struggle with more challenging material and will not have the cognitive resources available to attend to the meaning of the text (Samuels & Flor, 1997). As students progress through school, learning to read becomes the task of reading to learn, making fluency a vital skill.

LaBerge and Samuels (1974) proposed a *theory of automaticity,* which described a cognitive-based process of reading. With all the complex processes needed to execute reading, they suggested that if each component required attention, there would be an overload on the demand of cognitive resources, making it impossible to read. Based on the assumption that comprehension would always require attention from higher-level cognition, if other lower-level processes could become automated, attention would be freed up for understanding meaning in text. This concept of automatic word recognition set the stage for fluency to become an indicator of overall reading ability, with the accuracy and speed of decoding oral reading a measurable behavior of automaticity.

Stanovich (2000) shared the assumption with LaBerge and Samuels that efficient low-level word recognition frees up attention for higher-level processes, like comprehension. However, his study differed in the type of processes that occur during word recognition and what happens when they are inefficient. Current models suggest

that word recognition and reading are more of an interactive process, with some processes working independently and simultaneously.

To further understand reading acquisition and fluency, the role of language development and knowledge of syntactic/semantic processes needs to be highlighted. Ehri's (1995,1998) stages of reading development and fluency suggest that at the Fully Alphabetic Stage, readers recognize letters and know the individual letter sounds. When beginning to read, each letter is sounded out and blended together. Once the word is accurately encountered several times in text it often becomes a sight word, meaning the sight of the word triggers the memory of that word and is instantly read. This is similar to Share & Stanovich's (1995) study that showed the acquisition of the fully specified orthographic representation, which enables fluent reading, is formed after a word has been accurately identified a number of different times during text reading.

Readers who recognize whole words instantly have progressed to the next stage, known as the Consolidated Alphabetic Stage. Readers now store words as units, instead of storing each letter as an individual unit, along with identified letter patterns. These patterns, commonly known as word families, allow for easier word recognition when new encountering new words. For example, if the words *hall*, *ball*, and *mall* were sight words, reading the word *fall* for the first time would only require the connection of two units: *f* and *–all*, instead of four units the Fully Alphabetic reader would need to blend (Ehri, 1998)

At the higher-level reading stages, progress towards advanced fluency rates is dependent on the reader's vocabulary and oral language development. As the reader begins to encounter more unknown words, activation of oral language and vocabulary aid

in the speed of identification, word analysis, and comprehension (Ehri, 1998). It is important to point out that fluency is dependent on reader's vocabulary as well as word-recognition skills. (Torgesen, Rashotte, & Alexander, 2005).

One of the most common methods for building reading fluency is a method called repeated reading (RR). RR has consistently shown to increase reading fluency, accuracy, and comprehension for low achieving and special education students (Dowhower, 1987; Herman, 1985; Knupp, 1988; Samuels, 1979). RR consists of reading an appropriately leveled passage until a set rate of fluency is reached or the passage has been read at least three times, then repeating the procedure with a new passage (Dahl, 1979; Samuels, 1979; O'Shea, Sindelar, & O'Shea, 1985). In Samuels (1979) work on repeated reading, students read passages of 50 - 200 words until a set criterion of 85 words per minute (wpm) was met. Students then moved on to a new passage and reread the story until the criterion was met again. Graphs with reading rate were shown to students as they progressed through each rereading. As students read more passages, it took fewer rereadings to meet the 85-wpm mark. Samuels interpreted this as a carryover effect, showing that improvement in reading was generalizing. He also noted that RR worked because as reading fluency increased, less attention was used for decoding text, with more available for interpreting the meaning of the story. Chomsky (1978) reported similar findings for fluency and accuracy. He also observed that students' self-confidence and motivation to read on their own appeared to be improving.

Since Samuels' work on repeated readings, researchers have studied several variations of the method including standard oral repeated reading, unassisted repeated readings, assisted repeated readings, and repeated listening while reading. In one

examination, twenty third-grade students were paired together based on reading ability and exposed to two different treatments. One student from the pair repeatedly read a passage to a teacher during two days of the treatment. Meanwhile, the student's partner repeatedly listened to a teacher orally read a passage in a fluent manner, while silently following along. After two days, students switched treatments and participated in the other treatment for the same amount of time. Both treatments were effective at increasing student's reading fluency, with no significant differences between the two treatments groups for reading speed or accuracy (Rasinski, 1990).

Dowhower (1987) compared an assisted and unassisted repeated reading procedure on seventeen-second grade transitional readers' fluency, accuracy, and oral comprehension. Participants met four to six times per week, fifteen minutes a session, for six weeks. For the assisted group, students listened and read along to each passage on tape. Once students could read simultaneously with the tape, they were encouraged to practice without it. Students in the unassisted group repetitiously read the passages to themselves. Students could request help for word identification and both groups reread passages until a criterion fluency level of 100 wpm was met. Participants made significant gains in fluency, accuracy, and comprehension, regardless of the type of repeated reading procedure.

Knupp (1988) continued to investigate the effectiveness of RR with special education students by using procedures identical to Samuels' 1979 study with students classified as educationally handicapped. Participants were of average intelligence and received services in a resource room for reading disabilities. All showed improvement in reading fluency, accuracy, and comprehension. Sindelar, Monda, & O'Shea (1990) and

Rashotte & Torgesen (1985) also reported similar findings for Learning Disabled students.

Comprehension and fluency gains have been measured in relation to the number of re-readings through reading rate and having students answer questions, complete maze passages, or retell what they read. Sindelar, Monda, and O'Shea (1990) reported that low performing students in grades 3, 4, and 5 recalled significantly more when a passage was read three times as opposed to once. Similarly, in a study conducted by Dowhower (1987) second grade students showed significant improvement from the first to the fourth reading. Researchers typically have students read passages three to five times (Spring, Bluden, & Gatheral, 1981; Young, Bowers, and MacKinnon, 1996). In O'shea et al. (1985), third grade students read passages seven times each, with eighty-three percent of the improvement occurring after four rereadings.

Finally, few repeated reading studies have incorporated graphing in their research. Bell, Markley, & Yonker (1990) conducted a study comparing 42 second and third grade students' attitude toward reading before and after a repeated readings intervention. Students were randomly assigned to one of three groups: repeated readings with feedback, repeated reading with no feedback, and a control group. Feedback consisted of two graphs displaying the students' fluency and accuracy recorded for each reading of the passages. This study used the Attitudes Toward Reading Scale (Deck & Barnette, 1976) to measure student attitude toward reading. The only significant result reported was an increase in reading fluency for both treatment groups. No significant differences were found between the feedback and no feedback group.

Although there were several limitations to this study, stronger effects may have been found if goal setting was used in conjunction with the feedback treatment group. Research shows that knowledge of results or feedback paired with goals increases performance outcomes (Locke, Shaw, Saari, & Latham, 1981). Conte and Hinzte (2000) specifically studied the type of graphic feedback, performance, and effect sizes found in goal setting. Three groups of second grade students were randomly assigned to three treatment groups: aim-line goal, static goal, and control group. The aim-line goal was a line connecting student's baseline reading rate performance to his or her eight-week goal. A student's daily session goal was the previous session reading rate plus the average rate of increase needed to attain the end goal (approximately a 2.5 words per week increase). The static goal group had the same goal throughout the study, which was the end of study goal. During each session, students received encouragement and graphic feedback toward the present and future goal. Control group participants read one-minute reading probes but received no graph, goal setting, or feedback. Results showed that both goal setting plus feedback groups increased their reading rate compared to the control group. The largest effect was found for the aim-line plus feedback group, demonstrating that this procedure may lead to larger performance gains.

There are several conditions necessary for goals to affect performance. If goals are specific, proximal, and difficult, they are more likely to enhance learning (Locke et al., 1981). Goals such as 'do your best' are not sufficient enough to increase performance (Locke, 1968). Ambitious goals lead to higher student achievement than those given unambitious goals, when ability is present (Fuchs, Fuchs, & Deno, 1985). Fuchs et al. (1985) hypothesized that Clifford's (as cited in Fuchs et. al, 1985) theory on constructive

failure explained their finding, citing that when someone is challenged, the possibility of failing ignites persistence, task initiation, task resumption, and devotion of free time to the task, which over time, leads to better task performance.

Locke et al. (1981) discussed the difference between goal acceptance and goal commitment. They suggested that goal acceptance implies that a person has agreed to put forth effort toward a goal someone else has set. Whereas, goal commitment suggests that effort will be given toward achieving a goal, but the source of origination is not specified. At the time of publication their summary on goal setting did not find that goal commitment lead to enhanced performance. Since then, two studies on math performance have suggested that self-set goals lead to higher achievement compared to goals given by someone else (Fuchs, Bahr, & Herbert, 1989; Schunk, 1985). It is presumed that self-set goals are more likely to be accepted by the individual, strengthening that person's commitment to work towards the goal. Schunk (1985) found that those setting their own goals had higher initial expectations for attaining their goal. This expectation may have lead to greater task persistence and commitment early on, which may explain the greater growth rate for the self-set goal group in computational skills during the first half of the study by Fuchs et al. (1989).

Researchers hypothesize that several mechanisms affect task performance. Through the specific and repeated reminders of a goal, attention and action are focused toward the attainment of it (Rothkopf & Billington, 1979). Energy and effort are committed toward reaching the goal, which leads to more persistence and the individual more motivated to develop relevant strategies for goal attainment (Locke & Latham, 1990). Students setting their own goals have reported higher self-efficacy and suggested

they were responsible for their success, when students who were given goals did not report as much ownership for their success (Gaa, 1979). More frequent feedback, specificity, and proximity of goals may also contribute to more frequent self-evaluation, leading to greater motivation, task persistence, and success (Fuchs, Butterworth, & Fuchs, 1989).

CBM is the ideal tool to use for promotion of goal setting and student achievement when progress monitoring. Pairing CBM with goal setting, student goal awareness and goal knowledge is much greater compared to goal setting without CBM (Fuchs, Deno, & Mirkin, 1984; Fuchs et al., 1989; Swain, 2005). In addition, teachers have a better understanding of student's abilities, progress, and likelihood of goal attainment (Fuchs et al., 1984). This information has helped teachers make instructional changes, promoting greater learning outcomes (Fuchs et al., 1989).

Whether or not student goal setting was specifically studied during investigations of CBM, students made greater achievement gains when CBM was employed versus conditions without CBM or other traditional methods teachers used to assess student progress (Fuchs et al., 1984). With the success of goal-setting and CBM it is necessary to understand the possibilities of combining these with commonly used reading interventions aimed at improving low achieving readers. The present study used CBM and goal setting to monitor student fluency progress for a repeated reading intervention. Based on previous studies (Fuchs et al., 1989; Gaa, 1979; Locke et al., 1981; Swain, 2005) it was predicted that those participating in the repeated reading and goal setting group would outperform the repeated reading group and no-treatment control group for reading fluency rate on the final CBM reading probe. Additionally it was hypothesized

that the repeated reading and goal setting group would perform better than the repeated reading group, and the repeated reading group would outperform the no-treatment control group (Samuels, 1979; Young et al., 1996).

Method

Participants

Participants in this study were twenty-four third grade students from a diverse mid-western urban elementary school. Students were randomly selected based on reading fluency data collected by the school using Dynamic Indicators of Basic Early Literacy (DIBELS) (Good & Kaminski, 2002; http://dibels.uoregon.edu). All students were performing in the some-risk range according to the third grade DIBELS Oral Reading Fluency (ORF) winter benchmark criterion (Good & Kaminski, 2002). Participants were randomly assigned to one of three groups: repeated reading and goal setting, repeated reading, and no-treatment control group. At the time of this study, no participants were identified for special education services or were receiving additional instruction to the core curriculum in reading. Mean scores for DIBELS baseline data and a one-way ANOVA revealed no significant differences among the repeated readings and goal setting group ($M = 88.5$), repeated readings group ($M = 84.33$), and control group ($M = 85.25$), $F(2, 21) = .13$, $p = .88$.

Materials

The following materials were used in this study: Third grade DIBELS ORF progress monitoring probes, CBM probes, Books, and graph paper. All groups were administered the DIBELS ORF progress monitoring probes, three initially to obtain a baseline for reading fluency and once per week during the six week study for monitoring

reading fluency progress. CBM probes from three different reading levels were created from the third grade reading curriculum to obtain instructional reading levels for students in both treatment groups. With this information, the repeated reading treatment sessions could begin. Reading materials used in the sessions were leveled books taken directly from the third grade curriculum. Finally, each week during progress monitoring, the repeated reading and goal setting group would use graph paper to record reading fluency scores and goals.

DIBELS: DIBELS Oral Reading Fluency progress monitoring probes for third grade (Good, Kaminski, & Dill, 2002) were used to monitor student's weekly reading achievement and collect baseline data prior to intervention. DIBELS measures phonological awareness, alphabetic principle, and fluency with connected text. It is a uniform set of procedures similar in format to curriculum-based measurement. It is often used to identify students in need of early reading intervention and predict future reading success. Passages are leveled based on several readability analyses. Three benchmark passages are chosen from the lot, and the remainders are put in order based on readability to be used for progress monitoring. Readability variance among passages is minimal so small changes in reading ability can be detected (Good, Kaminski, & Dill, 2002; Kaminski & Good, 1998).

Books: Books used for the repeated reading procedure were taken from the school's reading curriculum, the *Scholastic Guided Reading Program* (http://teacher.scholastic.com/products/guidedreading/index.htm). This curriculum includes hundreds of storybooks, fiction and non-fiction, all leveled based on reading difficulty. A variety of books were selected for each participant's instructional reading

level. Third grade teachers informed the researcher of the average reading level range, which was from level K - N. An effort was made to choose books without technical vocabulary that were high interest. Custom reading probes were also developed from this curriculum to assess student's instructional reading level in order to place each student within appropriate leveled books for the repeated reading intervention.

CBM: Instructional reading levels were obtained by using CBM probes created from the reading curriculum (*Scholastic Guided Reading Program*) used for the repeated reading intervention. Procedures found in Shapiro (2004) were followed for constructing oral reading probes. At the onset of the study, classroom teachers informed the researcher of each student's estimated reading level. Based on this information, three reading probes were developed from the reading curriculum, with one probe from level K, L, and M. Probes were approximately 150 – 200 words in length and each was increasingly more difficult based on the readability formula from Spache (1953) part of a website that creates custom made CBM probes (http://www.interventioncentral.org/htmdocs/tools/okapi/okapi.shtml). Instructional reading level criteria were based on Fuchs and Deno's (as cited in Shapiro, 2004) research recommending third grade students in grade level material should fall within a range of 70 – 100 words read correctly per minute, with six or fewer errors. Dowhower (1994) also suggested students should have at least 85% accuracy in reading material used for repeated reading in order to avoid frustration. A sample examiner and student copy of a CBM probe are provided in Appendix A and B, respectively.

Graph: Students in the repeated readings and goal setting group were provided with a graph to record their weekly fluency scores and goals. Displayed on the vertical

axis are words read correctly per minute and weeks displayed on the horizontal axis. A sample graph is in Appendix C.

Procedure

General Procedures: Students were randomly selected to participate from a pool of readers in the some-risk category based on DIBELS ORF benchmark data previously collected by school staff. After giving a brief overview to students, those who agreed to participate were given an informed consent document for their parent or guardian to sign. Each student was randomly assigned to one of three groups: Repeated Readings and Goal Setting, Repeated Readings, or the No-Treatment Control Group, with six students in the two former groups and twelve in the latter. Each treatment group met for 20 minutes each day, four days per week for six weeks. All three groups continued to receive core reading instruction throughout the study.

Prior to beginning treatment sessions, the researcher administered three CBM reading probes created from the third grade reading curriculum to determine each student's instructional reading level. Next, three probes from the third grade DIBELS ORF progress monitoring materials were administered to determine baseline reading fluency rates by using the median score for baseline. Finally, the researcher collected progress monitoring data from all students by administering a new third grade DIBELS ORF progress monitoring probe each week.

DIBELS administration and scoring procedures were used for both DIBELS progress monitoring and CBM oral reading probes. The researcher and student each had their own copy of the reading probe. Students had one minute to read as much as they could while the researcher recorded errors. Fluency was defined as the number of words

read correctly during the one-minute reading probe. Mispronunciations, substitutions, omissions, transpositions, and words provided by the researcher after three seconds counted as errors. Fluency was calculated by taking the total number of words attempted by the reader during the timed reading probe and subtracting the total number of words read incorrectly.

No-Treatment Control Group: Students in the no-treatment control group were advised that the researcher would be meeting with them on a weekly basis to listen to them read. The researcher communicated the expectation of reading during school and told students to try their best and make sure they were reading during the school-wide reading sessions held everyday after lunch, also known as DEAR (Drop Everything And Read). These students did not participate in any treatment procedure.

Weekly progress monitoring using DIBELS ORF progress monitoring probes followed DIBELS standardized administration and scoring procedures. Each time students finished the one-minute reading probe administration they were told 'good job' and sent back to their classroom. No other verbal or graphic feedback was provided about their performance.

Repeated Readings Treatment Group: The repeated readings procedure was identical for each treatment group. Procedures were an amalgamation of previous studies involving different applications of the repeated reading method. Students were paired with a partner of the same reading level and required to read a book four times before choosing a new one. Previous research shows that the benefits of repeated reading are typically found when passages are read between three to five times (Dowhower, 1994; Sindelar et al., 1990; Spring et al., 1981; Young et al., 1996). During the twenty-minute

session, one student in each pair would start by reading for the first five minutes. Student pairs switched readers after each five-minute interval, until the session ended for that day. Although this exact procedure is not cited in the literature, it is based on other paired repeated reading procedures and peer tutoring models (Delquadri, Greenwood, Whorton, Carta, Hall, 1986; Homan, Klesius, Hite, 1993; Koskinen & Blum, 1986). The researcher instructed students to ask for assistance if they could not read a word, consistent with Dowhower (1987). Partners often helped sound out words as the researcher circulated amongst the groups assisting students with pronunciations or questions as needed. Students recorded the title of each book and a tally mark after they completed each reading. The required four repetitious readings were not always completed in one session, so page numbers were marked to allow students to begin where they had left off the previous day. Each pair chose a new book from a selection of appropriately leveled books after completing the readings and repeated the process. Data collection procedures were identical to those used with the no-treatment control group.

Repeated Readings and Goal Setting Treatment Group: This group followed the repeated reading procedure described above. In addition to the treatment, students also set weekly reading fluency goals and received feedback related to goal progress. Students graphed their weekly goal and reading rate.

Prior to the weekly progress monitoring sessions, the researcher described the goal setting procedure and explained the meaning of the graph to students. Recording the baseline data point was used for student practice. After this, students individually set their first goal and graphed it. During progress monitoring sessions after the student had finished the reading probe, the researcher provided feedback on whether the student had

met his or her goal for the week. Praise was offered for meeting the goal; otherwise, the student was asked how he or she could meet their goal next week. Afterwards, students graphed their new data point, set a new goal, and graphed it as well.

Design and Analysis: To determine whether there was a significant effect for the repeated reading and goal setting group, a two-way analysis of variance for mixed factorial designs was conducted on weekly reading fluency rates for all students. The within-subjects factors were time as the independent variable and pre and posttest scores as the dependent variable. The between-subjects factor was type of group.

Results

Results from this study show that all participants made gains in reading rate from pre to posttest (See Table 1). In order to determine if there were significant differences among the groups, a two-way analysis of variance for mixed factorial designs was conducted on the pre and posttest reading fluency scores. At an alpha level of .05, results indicate that there was a significant main effect of time, $F(1, 21) = 179.726$, $p < .00$. This main effect accounted for 89.5 % of the total variance in the reading fluency rates. Over time, all groups performed better (See Figure 1). There was no significant interaction between time and treatment groups, $F(2, 21) = 2.989$, $p = .072$.

Discussion

This study investigated the effect of repeated reading and goal setting on reading fluency. Based on previous research in repeated reading and goal setting, it was hypothesized that the repeated reading and goal setting group would outperform the repeated reading and no-treatment control group and the repeated reading group would perform better than the control group. Differences in pre and posttest scores indicated that

all students made gains in oral reading fluency. This finding, however, was due to the effect of time. There were no significant differences for the repeated reading and goal setting group or repeated reading and control group. Results can be explained by development and maturation, but most likely because of exposure to print. Students in the repeated reading group were receiving an additional 80 minutes per week reading connected text.

Although no significant effects for treatment were found, most students made substantial gains in reading fluency compared to weekly word rate increases in the literature. Fuchs and associates (1989) stated that weekly fluency gains of two and a half words per week are ambitious. Many students in the study averaged weekly gains of more than three words per week. The repeated reading and goal setting group showed an overall trend, making greater gains than either the repeated reading or no-treatment control group. This may suggest that the repeated reading paired with goal setting is an efficacious treatment, which is shown to some degree in the literature (Conte & Hintze, 2000; Swain, 2005). This procedure may also work well as a reading treatment for lower achieving students or students receiving special education services, where some of these procedures, like weekly progress monitoring, should already be taking place (Fuchs et al., 1984). Results may have also shown a stronger effect if additional students participated in the study or outlying data points were removed. If some of these limitations or others could be removed or avoided, significant results may be found.

Another point to highlight is the fact that this study had a control group. It is interesting to note that the mean fluency rates for the repeated reading and no-treatment control group were the same at the conclusion of the study. This is surprising given that

the repeated reading group received more reading time between instructional planning time for reading, DEAR, and this study, due to logistics. This raises questions and it is important to point out that many of the repeated reading studies in the literature do not have control groups. Often a study is only comparing two treatments, usually both variations of the repeated reading method or variables related to the method (Dowhower, 1987; Herman, 1985; Rasinski, 1990). In addition, some of these studies have found no significant differences between the two treatments, yet go on to suggest that both treatments are efficacious without giving cause to the idea of time and exposure to print. This study adds to the research base by including an examination and comparison of repeated reading and goal setting, repeated reading alone, and a control group.

A limitation to this study was the low number of participants. Most studies finding significant treatment effects had over thirty participants (Bell et al., 1990; Fuchs et al., 1984; Fuchs et al., 1985; Schunk, 1985). This also would have helped by adding more variability in the data, giving less weight to outlier data points. Lack of systematic error correction procedures may have affected the outcomes as well. A recent study by Nelson, Alber, and Gordy (2004) suggests that systematic error correction procedures paired with repeated reading may have positive effects on reading accuracy and proficiency. On that same note, the lack of standardized feedback procedures for the repeated reading and goal setting group during progress monitoring sessions may have introduced more variability or additional error.

There were also real world logistical difficulties. Due to lack of space in the school, data collection and treatment sessions were not held in a classroom. This is not uncommon for the "extra" groups and intervention sessions that take place in schools;

however, it is a constant struggle to always be in search for places to carry-out these necessary additions to core instruction for students who need and deserve this attention. Constant interruptions and lack of appropriate work areas that include chairs, tables, and chalk boards only add to the difficulties of learning for these students and make it harder to maintain structure and consistency in the delivery of the intervention. Conditions like these obviously have some impact of the efficacy of the treatment and outcomes.

Other real world limitations included the study taking place near the end of the school year and one student who presented significant behavior problems. Because state testing was completed and the end of the school year was approaching, many classrooms were having more fun and interesting lessons, such as science, and taking field trips. On several occasions students asked to go back to class early because a fun activity was taking place and seemed more reinforcing than reading at that point. The researcher had to make compromises with students several times to accommodate student requests, realizing that they may not get much out of the session if they didn't want to be there anyway. Other times, the researcher spent the majority of a treatment session dealing with one particular student's behavior problems rather than monitoring reading for the rest of the group and answering any questions they had.

Future research should consider several suggestions. First, if possible, have another researcher available during treatment sessions to more closely monitor students, provide systematic error correction, and be able to handle behavior problems more effectively without the expense of other student's learning. The study should also be conducted earlier in the school year to avoid competing with special classroom activities. In addition, it would be interesting to look at the last DIBELS benchmark for the school

year to see if results are consistent or if carry-over effects may be found. Likewise, comparing the data to state-wide testing results or other school benchmark data may yield new findings.

Implications of this study are great considering the possibilities of goal setting and repeated reading in the school setting. The trend of higher fluency scores for that group suggests that it may be a viable treatment for many students. Also, the substantial gains in reading fluency for most students are interesting and surprising. More attention needs to be given to average weekly fluency gains in studies using CBM to monitor progress of treatment effects. In summary, more exposure to print may be the best way to increase reading gains for students.

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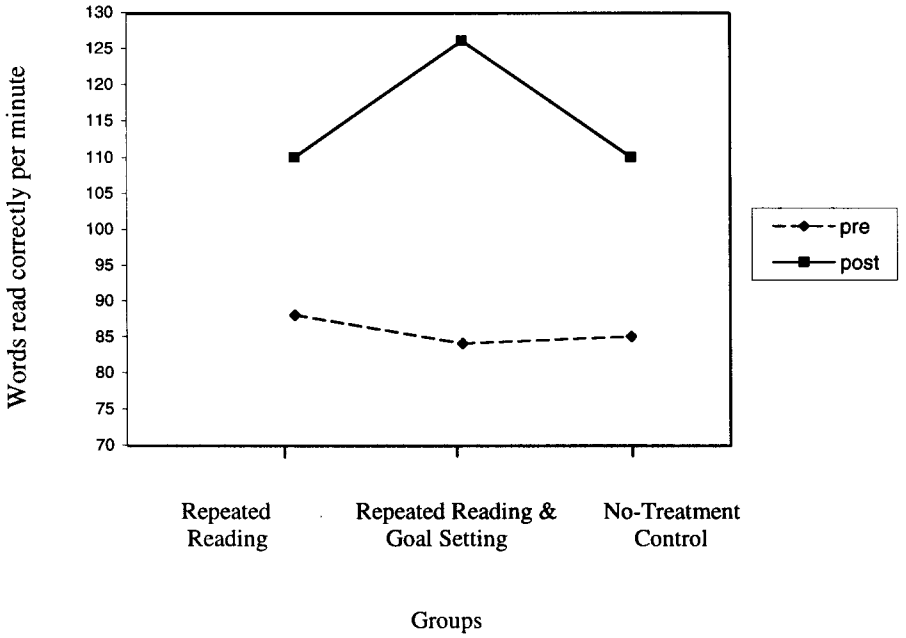
Table 1. Reading Fluency Rates for All Participants

Group	Pre-test	Post-test	Change
RR & Goal Setting Participants			
1	99	129	30
2	70	124	54
3	82	121	39
4	82	127	45
5	80	114	34
6	118	143	25
RR Participants			
1	81	114	33
2	74	108	34
3	81	116	35
4	83	97	14
5	79	113	34
6	108	117	9
No-Treatment Control Participants			
1	104	128	24
2	73	109	36
3	71	89	18
4	70	108	38
5	65	89	24
6	90	131	41
7	83	100	17
8	97	110	13
9	99	111	12
10	71	103	32
11	87	112	25
12	113	140	27

Figure 1. Mean Reading Rate Pre and Posttest Scores for all groups



Appendix A

Sample CBM Reading Probe - Examiner Copy

Rosalie was two years older than Max and thought she knew everything. 11
Sometimes it seemed as if she really did. Once when Max ordered greeting cards 25
to sell for fabulous prizes, Rosalie had told him that nobody would buy any. She 40
was right. The cards were ugly and had long, corny poems written inside. Max 54
was sure that if a sick person received one of those get-well cards, he or she would 72
feel even sicker. And then there was the time Max's scout troop had to sell 87
chocolate candy bars to raise money for a trip to the Wisconsin Dells. Rosalie 101
predicted that Max would eat the candy before he had a chance to sell any. She 117
was right again - even though she had helped him eat almost half of it. But this 133
time Rosalie was wrong. Motor Man was not a piece of junk. Max wound up 148
the robot and set him on the kitchen floor. Motor Man ran around in a circle. 165
He could run in circles or straight, depending on which way you turned his feet. 180
Max had him running in all directions. "Wow, this is great, " he said. "I should've 195
bought two of them. Then they could race each other." 205

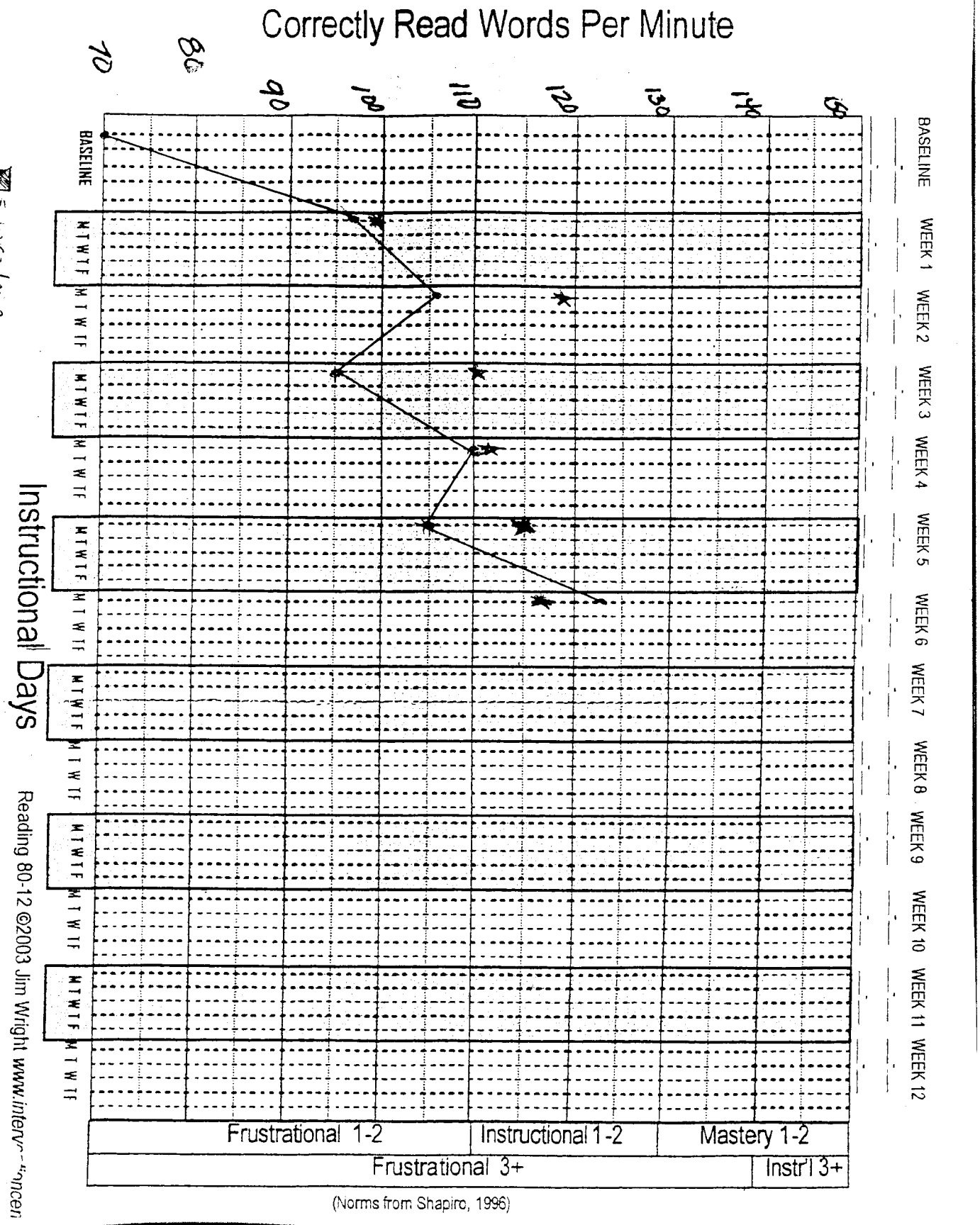
Appendix B

Sample CBM Reading Probe - Student Copy

Rosalie was two years older than Max and thought she knew everything. Sometimes it seemed as if she really did. Once when Max ordered greeting cards to sell for fabulous prizes, Rosalie had told him that nobody would buy any. She was right. The cards were ugly and had long, corny poems written inside. Max was sure that if a sick person received one of those get-well cards, he or she would feel even sicker. And then there was the time Max's scout troop had to sell chocolate candy bars to raise money for a trip to the Wisconsin Dells. Rosalie predicted that Max would eat the candy before he had a chance to sell any. She was right again - even though she had helped him eat almost half of it. But this time Rosalie was wrong. Motor Man was not a piece of junk. Max wound up the robot and set him on the kitchen floor. Motor Man ran around in a circle. He could run in circles or straight, depending on which way you turned his feet. Max had him running in all directions. "Wow, this is great, " he said. "I should've bought two of them. Then they could race each other."

Appendix C

Student **Graph of Fluency** and Weekly Goal



(Norms from Shapiro, 1996)